1874MNRAS..35...90E

I recently made a close examination of the Transits of 1761 and 1769, after determining elements from Le Verrier's Tables. As was to be expected, I arrived at very similar conclusions to those he has obtained in his work for the *Tables of Venus.*

With regard to semi-diameters, I now think it will probably be found that we should have made closer predictions of the times of contact by adopting the values to which I have alluded. As Le Verrier remarked to me, "the two must go together," and up to the last transit we had no means of ensuring this, except by adopting the diameters deduced from the transits of last century.

With Le Verrier's values for semi-diameters (*Introduction to Tables of Venus*, p. 40) :—

Cairo.	2nd Internal Contact	Dec. 8	$20^h\ 11^m\ 8^s$	Local M.T.
	$2^h\ 5^m\ 1^s{\cdot}4$ E.		$344^\circ{\cdot}7$	N. to E.
	$+30^\circ\ 2'\ 4''$		$32^\circ{\cdot}3$	Vert. to E.
Thebes.	2nd Internal Contact	Dec. 8	$20^h\ 16^m\ 0^s$	Local M.T.
(Ruins of Luxor)				
	$2^h\ 10^m\ 21^s{\cdot}1$ E.		$344^\circ{\cdot}8$	N. to E.
	$+25^\circ\ 41'\ 57''$		$35^\circ{\cdot}3$	Vert. to E.
Alexandria.	2nd Internal Contact	Dec. 8	$20^h\ 5^m\ 39^s$	Local M.T.
	$1^h\ 59^m\ 25^s{\cdot}65$ E.		$344^\circ{\cdot}7$	N. to E.
	$+31^\circ\ 11'\ 47''$		$32^\circ{\cdot}1$	Vert. to E.

3 *Verulam Buildings, Gray's Inn, W.C.,*
1874, *Dec.* 11.

Extract from a Letter from R. J. Ellery, Esq., F.R.S. *to* Rev. Dr. T. R. Robinson, F.R.S.

We are now in the midst of a systematic series of observations of Sir John Herschel's figured Nebulæ, many of which appear to have greatly changed since the Cape drawings, not only in shape and character, but also apparently in position with respect to some of the stars Sir John figured with the Nebulæ. As soon as I have got over the present pressure, I will send you a list of the most remarkable differences that have been observed. . . . We have still got Coggia's Comet in view ; and Mr. Turner made a sketch from it last night with the great Melbourne telescope —it is too faint now for smaller instruments.

For the transit of Venus I have decided to employ the great Melbourne telescope for photography at the primary focus. I proposed to have a disk (with radial slits) 19″ diameter rotating

Downloaded from http://mnras.oxfordjournals.org/ by guest on March 25, 2016

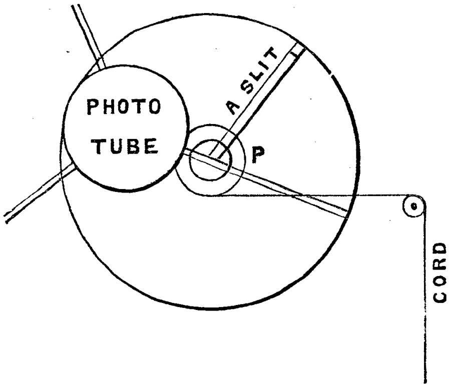
© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1874MNRAS..35...91D

upon an arm two inches outside the mouth of plate-holder tube—so that the radial slit will traverse just in front of the photo-apparatus in same place as the Moon shutter now is. The rotation of the disk will be done by a cord and weight wound half-a-turn around a small pulley on the axis of the disk, the cord being led down to the eye-end by small guide pulleys.

In setting the shutter, the disk is turned till the slit is in position; shown when the cord is wound half-a-turn on the pulley P and the disk held by a detent; on detaching the detent, the disk rotates, carrying the slit across the photo-apparatus, where it is caught by the detent falling into another notch.

The cord passes its dead point and a little beyond it, by the momentum of the disk, and winds up the weight slightly the contrary way; and it is thought that a moderately uniform motion of the slit across the plate-holder may be got in this way. I hope to be able to report our success with this arrangement to you by the next mail.



Melbourne,
1874, *October* 7.

On Personality in observing Transits of the First and Second Limbs of the Sun. By E. Dunkin, Esq.

In the *Monthly Notices*, vol. xxix. pp. 259–268, a short paper of mine is inserted, the object of which was to draw the attention of astronomers to a well-marked personality exhibited in the observations of the first and second limbs of the Moon, and to the fact that this personality in the case of some of the observers amounts to a very important quantity. These personal differences are detected in the tabular errors of R.A. of the Moon, determined both from the meridional and extra-meridional observations, and the steadiness of the results from year to year is a decided proof of the reality of the personality.

This question has again come before the Society, bearing upon

Downloaded from http://mnras.oxfordjournals.org/ by guest on March 25, 2016

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System